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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/652,986

08/28/2003

Shigenori Tomonaga

16869S-092800US

2985

20350

7590

08/15/2006

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EXAMINER

SIDDIQI, MOHAMMAD A

ART UNIT

PAPER NUMBER

2154

DATE MAILED: 08/15/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Interview Summary	Application No.		Applicant(s)	
	10/652,986		TOMONAGA ET AL.	
	Examiner		Art Unit	
	Mohammad A. Siddiqi		2154	

All participants (applicant, applicant's representative, PTO personnel):

(1) Mohammad A. Siddiqi. (3)_____.

(2) Chun-Pok Leung. (4)_____.

Date of Interview: 09 August 2006.

Type: a) ☒ Telephonic b) ☐ Video Conference
c) ☐ Personal [copy given to: 1) ☐ applicant 2) ☒ applicant's representative]

Exhibit shown or demonstration conducted: d) ☐ Yes e) ☒ No.
If Yes, brief description: _____.

Claim(s) discussed: 1.

Identification of prior art discussed: 6502205.

Agreement with respect to the claims f) ☐ was reached. g) ☐ was not reached. h) ☒ N/A.

Substance of Interview including description of the general nature of what was agreed to if an agreement was reached, or any other comments: Applicant would amend the independent claims to overcome the prior art, attached is proposed amendment faxed to the examiner.

(A fuller description, if necessary, and a copy of the amendments which the examiner agreed would render the claims allowable, if available, must be attached. Also, where no copy of the amendments that would render the claims allowable is available, a summary thereof must be attached.)

THE FORMAL WRITTEN REPLY TO THE LAST OFFICE ACTION MUST INCLUDE THE SUBSTANCE OF THE INTERVIEW. (See MPEP Section 713.04). If a reply to the last Office action has already been filed, APPLICANT IS GIVEN A NON-EXTENDABLE PERIOD OF THE LONGER OF ONE MONTH OR THIRTY DAYS FROM THIS INTERVIEW DATE, OR THE MAILING DATE OF THIS INTERVIEW SUMMARY FORM, WHICHEVER IS LATER, TO FILE A STATEMENT OF THE SUBSTANCE OF THE INTERVIEW. See Summary of Record of Interview requirements on reverse side or on attached sheet.

Examiner Note: You must sign this form unless it is an Attachment to a signed Office action.

Mohammad Siddiqi
Examiner's signature, if required

Summary of Record of Interview Requirements

Manual of Patent Examining Procedure (MPEP), Section 713.04, Substance of Interview Must be Made of Record

A complete written statement as to the substance of any face-to-face, video conference, or telephone interview with regard to an application must be made of record in the application whether or not an agreement with the examiner was reached at the interview.

Title 37 Code of Federal Regulations (CFR) § 1.133 Interviews Paragraph (b)

In every instance where reconsideration is requested in view of an interview with an examiner, a complete written statement of the reasons presented at the interview as warranting favorable action must be filed by the applicant. An interview does not remove the necessity for reply to Office action as specified in §§ 1.111, 1.135. (35 U.S.C. 132).

37 CFR §1.2 Business to be transacted in writing.

All business with the Patent or Trademark Office should be transacted in writing. The personal attendance of applicants or their attorneys or agents at the Patent and Trademark Office is unnecessary. The action of the Patent and Trademark Office will be based exclusively on the written record in the Office. No attention will be paid to any alleged oral promise, stipulation, or understanding in relation to which there is disagreement or doubt.

The action of the Patent and Trademark Office cannot be based exclusively on the written record in the Office if that record is itself incomplete through the failure to record the substance of interviews.

It is the responsibility of the applicant or the attorney or agent to make the substance of an interview of record in the application file, unless the examiner indicates he or she will do so. It is the examiner's responsibility to see that such a record is made and to correct material inaccuracies which bear directly on the question of patentability.

Examiners must complete an Interview Summary Form for each interview held where a matter of substance has been discussed during the interview by checking the appropriate boxes and filling in the blanks. Discussions regarding only procedural matters, directed solely to restriction requirements for which interview recordation is otherwise provided for in Section 812.01 of the Manual of Patent Examining Procedure, or pointing out typographical errors or unreadable script in Office actions or the like, are excluded from the interview recordation procedures below. Where the substance of an interview is completely recorded in an Examiners Amendment, no separate Interview Summary Record is required.

The Interview Summary Form shall be given an appropriate Paper No., placed in the right hand portion of the file, and listed on the "Contents" section of the file wrapper. In a personal interview, a duplicate of the Form is given to the applicant (or attorney or agent) at the conclusion of the interview. In the case of a telephone or video-conference interview, the copy is mailed to the applicant's correspondence address either with or prior to the next official communication. If additional correspondence from the examiner is not likely before an allowance or if other circumstances dictate, the Form should be mailed promptly after the interview rather than with the next official communication.

The Form provides for recordation of the following information:

- Application Number (Series Code and Serial Number)
- Name of applicant
- Name of examiner
- Date of interview
- Type of interview (telephonic, video-conference, or personal)
- Name of participant(s) (applicant, attorney or agent, examiner, other PTO personnel, etc.)
- An indication whether or not an exhibit was shown or a demonstration conducted
- An identification of the specific prior art discussed
- An indication whether an agreement was reached and if so, a description of the general nature of the agreement (may be by attachment of a copy of amendments or claims agreed as being allowable). Note: Agreement as to allowability is tentative and does not restrict further action by the examiner to the contrary.
- The signature of the examiner who conducted the interview (if Form is not an attachment to a signed Office action)

It is desirable that the examiner orally remind the applicant of his or her obligation to record the substance of the interview of each case. It should be noted, however, that the Interview Summary Form will not normally be considered a complete and proper recordation of the interview unless it includes, or is supplemented by the applicant or the examiner to include, all of the applicable items required below concerning the substance of the interview.

A complete and proper recordation of the substance of any interview should include at least the following applicable items:

- 1) A brief description of the nature of any exhibit shown or any demonstration conducted,
- 2) an identification of the claims discussed,
- 3) an identification of the specific prior art discussed,
- 4) an identification of the principal proposed amendments of a substantive nature discussed, unless these are already described on the Interview Summary Form completed by the Examiner,
- 5) a brief identification of the general thrust of the principal arguments presented to the examiner,
(The identification of arguments need not be lengthy or elaborate. A verbatim or highly detailed description of the arguments is not required. The identification of the arguments is sufficient if the general nature or thrust of the principal arguments made to the examiner can be understood in the context of the application file. Of course, the applicant may desire to emphasize and fully describe those arguments which he or she feels were or might be persuasive to the examiner.)
- 6) a general indication of any other pertinent matters discussed, and
- 7) if appropriate, the general results or outcome of the interview unless already described in the Interview Summary Form completed by the examiner.

Examiners are expected to carefully review the applicant's record of the substance of an interview. If the record is not complete and accurate, the examiner will give the applicant an extendable one month time period to correct the record.

Examiner to Check for Accuracy

If the claims are allowable for other reasons of record, the examiner should send a letter setting forth the examiner's version of the statement attributed to him or her. If the record is complete and accurate, the examiner should place the indication, "Interview Record OK" on the paper recording the substance of the interview along with the date and the examiner's initials.

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Client Ref. No.: W1176-01EK

Telephone Interview Agenda for 10/652,986

Examiner Mohammad A. Siddiqi

August 9, 2006 @ 2 p.m.

1. Claims to be discussed

Claim 1

2. Limitation of the claims to be discussed

1. (previously presented) A computer-readable storage medium having a program for use in [[an information processing apparatus]] a host computer having a function of displaying at a user interface a plurality of management information items expressing access status of a communication path for sending a data input/output request from said host computer to a storage device and returning result of the access request to said [[information processing apparatus]] host computer, said storage device having a plurality of disk drives storing data sent from said host computer and a disk controller controlling to store data sent from said host computer to at least one logical volume corresponding to the plurality of disk drives, said communication path providing communication between a host port of said information processing device, a disk controller port of said disk controller, a communication cable connecting between said host port and said disk controller port, and a logical volume of said storage device, said program comprising:

code for updating at least one of said management information items being displayed to express present access status of said communication path when detecting that access failure occurs at said communication path based on an access to said storage device, and/or updating at least one of said management information items being displayed when receiving from said user interface an input for updating said management information items being displayed;

code for displaying information between a communication path ID of said communication path, a disk controller port ID of said disk controller port, a logical volume ID of said logical volume of said storage device, and state of said communication path indicating off-line or on-line; and

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code for changing the state of said communication path [[from on-line to off-line]]
in which failure has occurred among displayed plurality of communication paths based on
receiving failure information from said storage device, ~~said failure information being
related to failure of said communication path~~ while a failure has occurred in any one of said
displayed plurality of communication paths.

The present invention provides, among others, the following features not taught or suggested in Yanai et al.:

- (1) a plurality of access paths between the host computer and the storage device, configured such that in accordance with a failure of any one of the access or communication paths, the status information concerning the failure path among path information (path ID, port ID, LUN, and path status) relating to a plurality of paths displayed on the host display is switched from "on line" status to "off line" status; whereby the status concerning a plurality of access paths between the host computer and the storage device can be provided to the user or manager in real time;
- (2) monitoring of a plurality of communication paths used for accessing from the host computer to the logical volume in the storage device, and dynamically displaying information between a communication path ID of said communication path, a disk controller port ID of said disk controller port, a logical volume ID of said logical volume of said storage device, and state of said communication path indicating off-line or on-line;
- (3) changing the state of the communication path in which failure has occurred; and
- (4) receiving failure information from the storage device while a failure has occurred in any of the displayed communication paths, and using that failure information to change the state of the communication path in which failure has occurred.

First, Yanai et al. is directed to remote copy between a plurality of data storage systems 14, 46 (col. 8, lines 18-23; col. 12, line 56 to col. 13, line 6; and col. 32, lines 47-48). Yanai et al. does not disclose the configuration in which in accordance with a failure of any one of the access or communication paths, the status information concerning the failure path among path information is switched from "on line" to "off line" in (1).

Second, Yanai et al. discloses monitoring of remote copy between a plurality of data storage systems 14, 46 by host mirroring software 213 (col. 8, lines 18-23; and col. 12, line 56 to col. 13, line 6). Yanai et al. does not teach displaying the information in (2).

Third, Yanai et al. is concerned with a failure of data transfer between a plurality of data storage systems 14, 46 (col. 8, lines 18-23; col. 12, line 56 to col. 13, line 6; and col. 32, lines 47-48). Yanai et al. is not concerned with failure in paths utilized for accessing from the host computer to a logical volume of the storage device, and does not disclose changing the state of the communication path in which failure has occurred in (3).

Fourth, Yanai et al. discloses failure or non-operation of the data storage system 14 by a disaster at a local site (col. 32, lines 1-16). Because Yanai et al. discloses disaster at the local site, it becomes necessary to re-start data storage system after the disaster of the local site so that all the channel

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interface becomes on line (col. 32, lines 1-16; and col. 32, lines 47-48). Yanai et al. does not collect and display information relating to failure of communication paths for access from the host computer to the storage device in (4).

3. References to be discussed

US 6,502,205 (Yanai et al.: cited by Examiner)

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